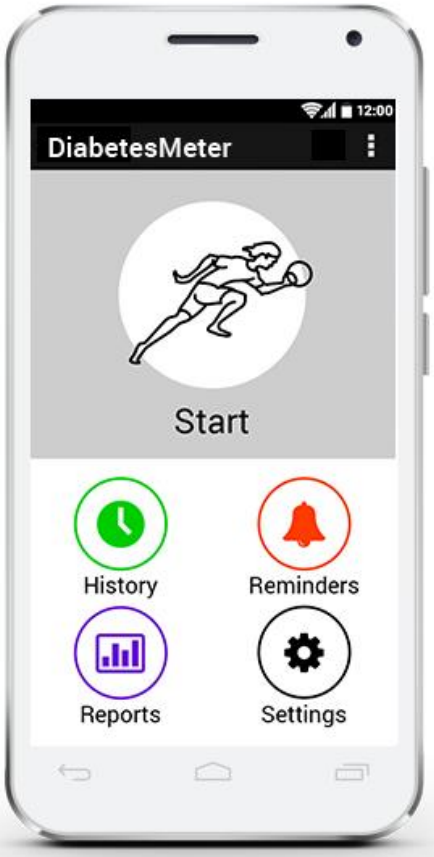
DiabetesMeter
User Manual

1. THE GENERAL OUTLINE

„DiabeticMeter” is an application for people suffering from insulin-dependent diabetes. It provides support in taking day-to-day decisions regarding products consumed, physical effort and insulin dosage. It includes a reporting module which allows a patient and a physician to monitor effectiveness of treatment and optimize it, if needed.

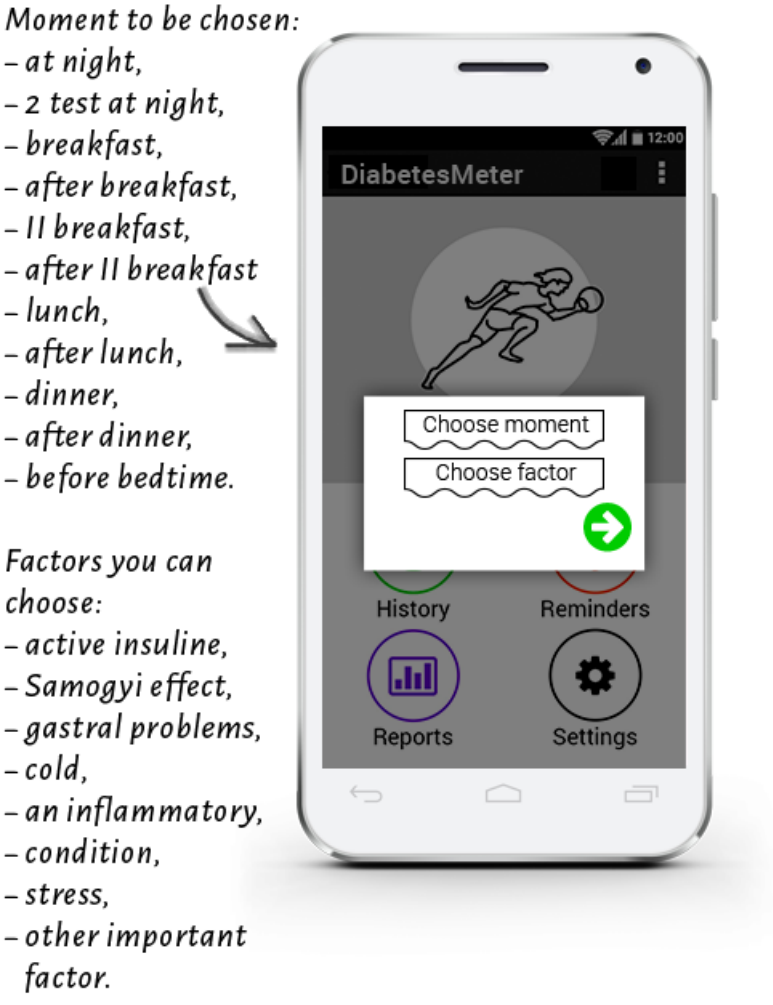


2. THE BASIC FUNCTIONALITY THAT IS STARTED WITH THE “START” BUTTON (IT PROVIDES SUPPORT TO ITS USER IN TAKING DAY-TO-DAY DECISIONS)

First, specify the user type, the method of carbohydrates calculation as well as the method of protein fat exchange calculation (see item 6.4). User with insulin pump is default setting.

2.1. Choose moment and factors

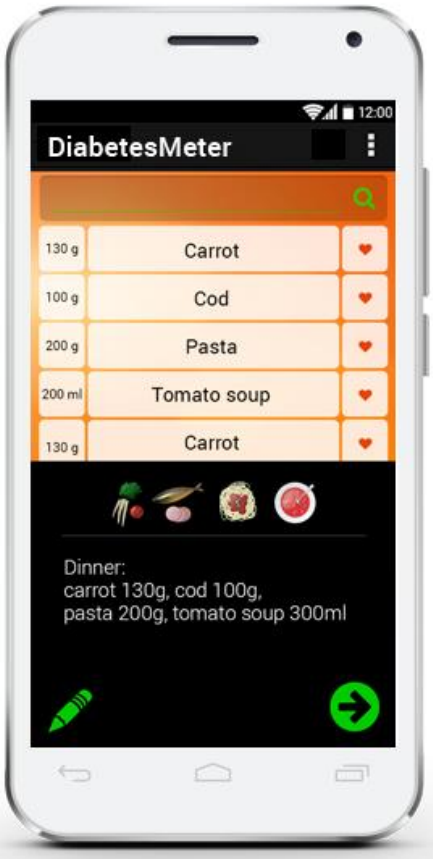
The user taps “start” button and selects a moment in time, for instance “breakfast” and, as an option, an important factor or factors affecting the blood sugar level.



Having selected the moment and choosing or omitting factors, the user activates the white arrow on green background button, the so called “Next” button.

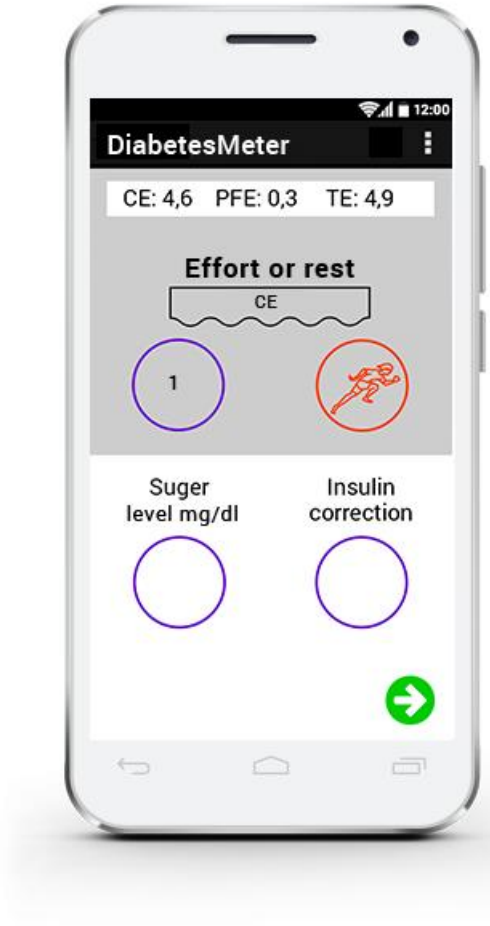
2.2. Meal

A meal may be entered for each specified moment. On the new screen, select products and specify in the dialogue box their quantity in grams, pieces, portions, packaging, glasses and other available measures.



2.3. Effort, rest and blood sugar level

On the next screen for a given meal the following information is presented: carbohydrate exchanges (CE), protein-fat exchanges (PFE), total exchanges (TE = CE + PFE). If the user intends to exert some physical effort, it may be balanced with an additional carbohydrate exchange or decreased dose of insulin. In such a case in the “Effort or rest” field, select “CE” or “Insulin”, and in a purple circle for entering the data, enter a positive value of CE or a negative value for insulin. If the user intends to have a rest, he/she enters a negative value of CE or a positive value for insulin in a purple circle for entering the data (insulin regarding effort/rest). Having entered the data the user activates the so called “Next” button.



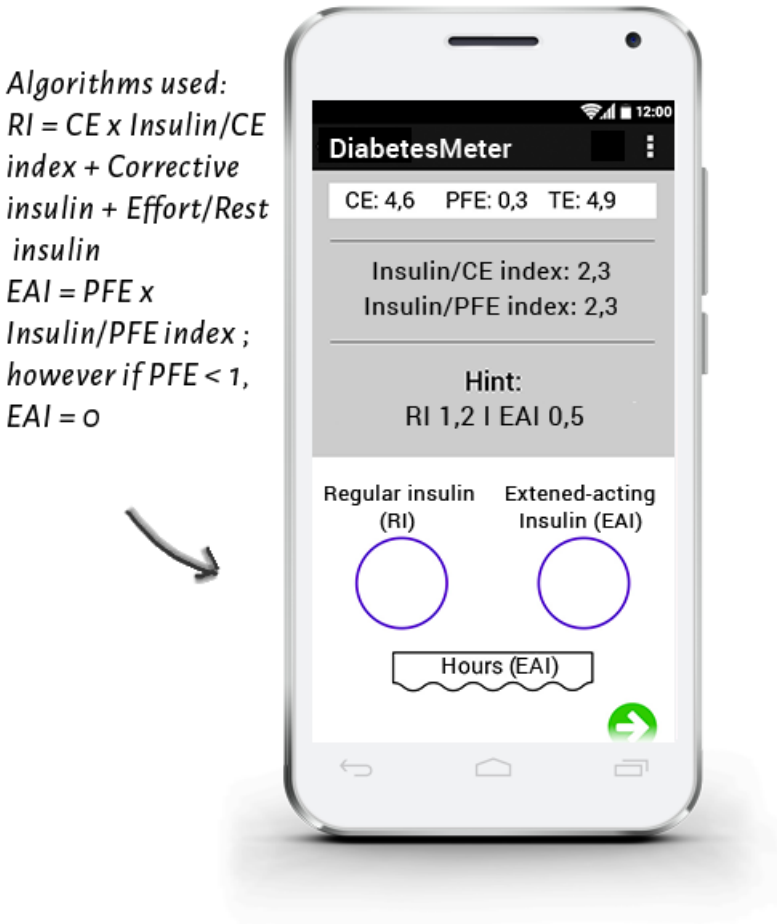
2.4. Historical hint (searching the meals similar in terms of ingredients)

Another screen presents historical data, meals similar in terms of ingredients, and on that screen you can analyse decisions that were taken as regards dose of insulin and results, namely blood sugar levels after such meals. User activates the so called “Next” button.

The application searches for meals made of products as similar as possible to the currently defined meal
12:00
DiabetesMeter
Breakfast 26.05.2014
Ingredients:
Apple 2 x apple (150 g),
Barley soup 1x portion (250 g)
Effort or rest: -1.0 CE
Blood sugar level: 150
Insulin correction: 1 unit
CE: 5.9 PFE: 2.4 TE: 8.3
Hint:
RI: 2.9 EAI: 1.0
Decision:
RI: 2.9 EAI: 1.0 time: 3h
Result:
After breakfast sugar: 186
2 breakfast sugar: 118

2.5. Determination of insulin dose

On the next screen, the user who already has the knowledge about the consumed meals, CE, PFE, TE, taking into account the hints and recommendations of the attending physician, specifies regular insulin dozes (RI), optionally extended-acting insulin (EAI) and time of action of the latter insulin. Regular and extended-acting insulin is an option available for users of insulin pumps.



In case of users with no pumps, instead of regular insulin there is short-acting insulin (SI) or intermediate-acting insulin (MIX), instead of extended-acting insulin there is PFE insulin, which aims to compensate consumed fat and protein.

2.6. Checking the data before saving them in the database

On the next screen, the user checks correctness of the data entered to the application and selects time from the drop list. The application enables entering the data not only on an on-going basis but also, for instance, at the end of the day. From the reporting point of view, it is important to enter the correct time of meals.

3. HISTORICAL ENTRIES

In order to review the data in the database, select the “History” button on the main page. A dialogue box occurs with a list of moments of time. Upon selection of the moment, the application finds historical entries. For instance, if after the meal the blood sugar level was low or high, the user may analyse what happened based on detailed information. You start entering the note by touching the screen. Type in a text and confirm it by pressing the button with the symbol of a floppy disk. The “Cases Report” is created that may be consulted with your attending physician.

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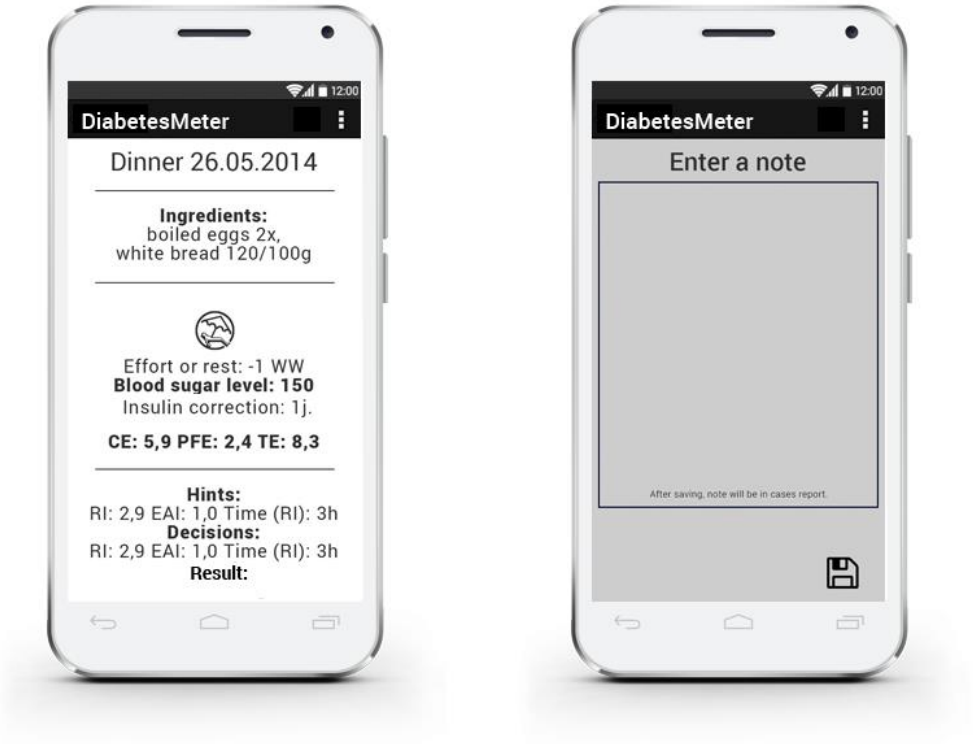
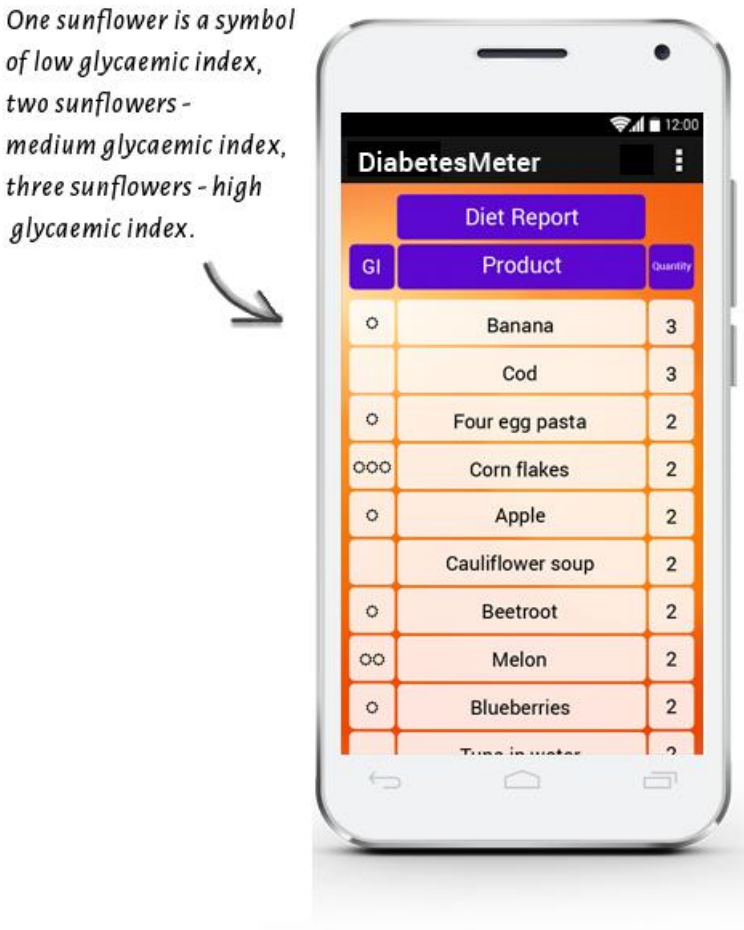


4. USE OF REPORTS

The application has a reporting module to allow the sick and physician monitor effectiveness of treatment.

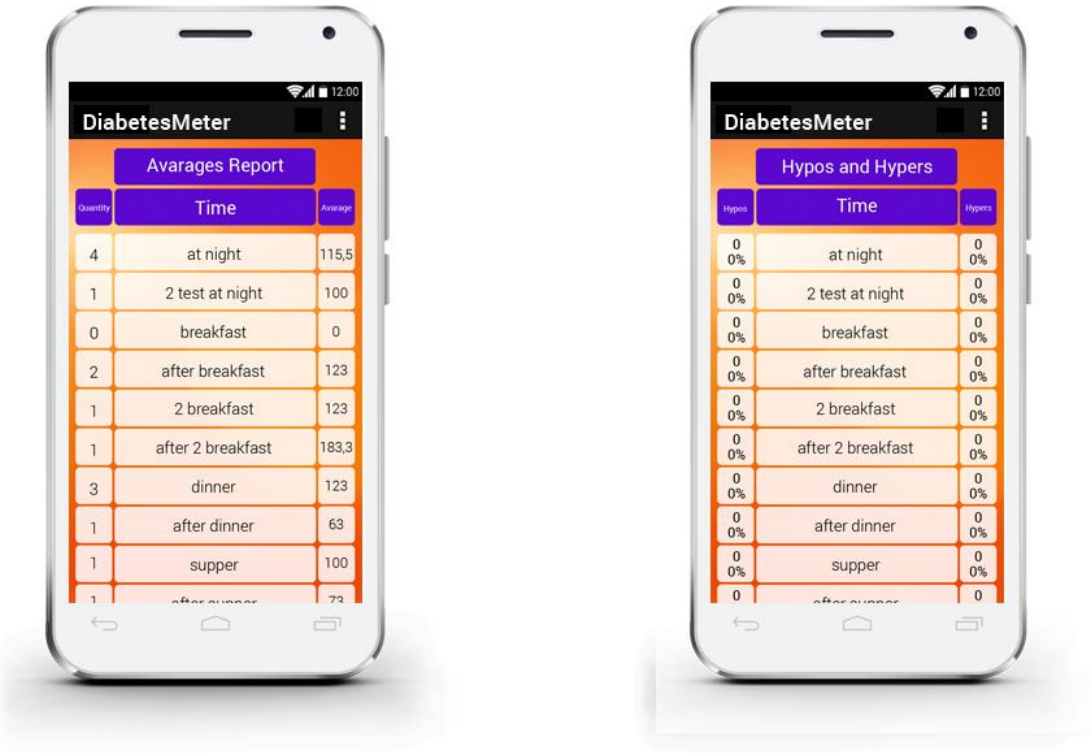
4.1. Diet Report

On the main page, select the “Reports” button, and then select the “Diet Report” in the dialogue box. The report shows the consumed products together with information about how often they are consumed (Quantity) and their glycaemic index (GI).



4.2. Averages Report and Hypos and Hypers Report

On the main page, select the “Reports” button, and then select the “Averages Report” in the dialogue box. The report shows the average blood sugar levels for a given moment in time. By analogy, you may select the “Hypos and Hypers Report" that includes information about low and high blood sugar levels defined in consultation with the attending physician, and entered to the application by user in: “Settings”/”Parameters”/”Low blood sugar level” or “High blood sugar level”.



4.3. Daily Reports

On the main page select the “Reports” button, and then, select “Daily Reports” in the dialogue box. The reports are for the last 28 days and they are grouped by weeks. The report includes information about moment in time and blood sugar level. The day of interest to you is selected by clicking on the date.

Upon selection of appropriate data, the report occurs. If you click on a given moment in time in the report, additional detailed information will be displayed: insulin, products in a meal, a significant factor, information about rest and physical effort, etc.

4.4. Basal Insulin Report

The “Basal Insulin Report” includes information about blood sugar level and basal insulin. The data are presented per specific hours. If the user entered the data under the basic functionality started with the “Start” button (see item 2), the said data will go to the report automatically. For other moments, hours, a user may manually enter sugar levels in the report. For

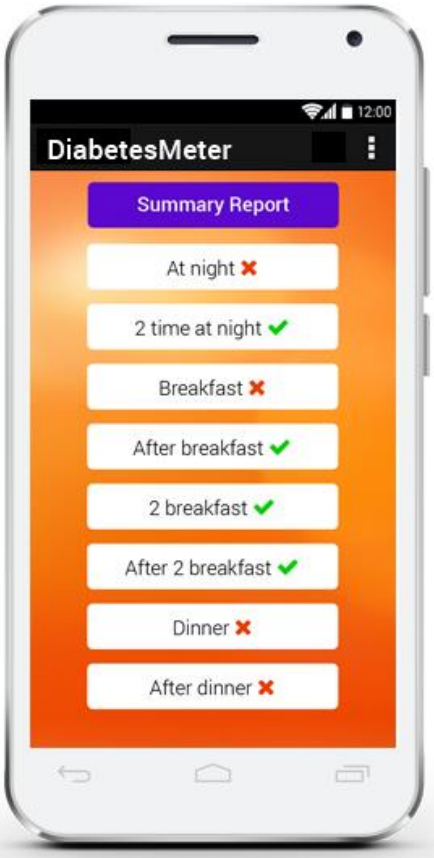
this purpose, click on the bottom bar “+ sugar”. The data are not saved automatically. If you want to save the report, you have to press the button with the symbol of a floppy disk. If you want to download a historical report, press the button with the symbol of a floppy disk and an arrow.

In case of users with no insulin pump, there is similar report named „Blood glucose profile”.

4.5. Summary Report

On the main page select the “Reports” button, and then, select “Summary Report” in the dialogue box. That report shows moments in time, that is, at night, 2 time at night, breakfast,

after breakfast, 2 breakfast, after 2 breakfast, lunch, after lunch, dinner, after dinner, at bedtime and information whether data were entered for a given moment in time. A tick stands for the entered data, a cross – no data.



5. REMINDERS

On the main page, select the “Reminders” button. The application has the functionality that reminds you about the coming date of the infusion set replacement. As a standard, infusion sets are replaced every 48 or 72 hours, and the user will be reminded 2 hours before the replacement time. The functionality requires the user to click an appropriate icon (presented below) after the infusion set is replaced.

User with no insulin pump may be reminded about the fixed time of every day insulin administration (set in Reminders module).

6. SETTINGS

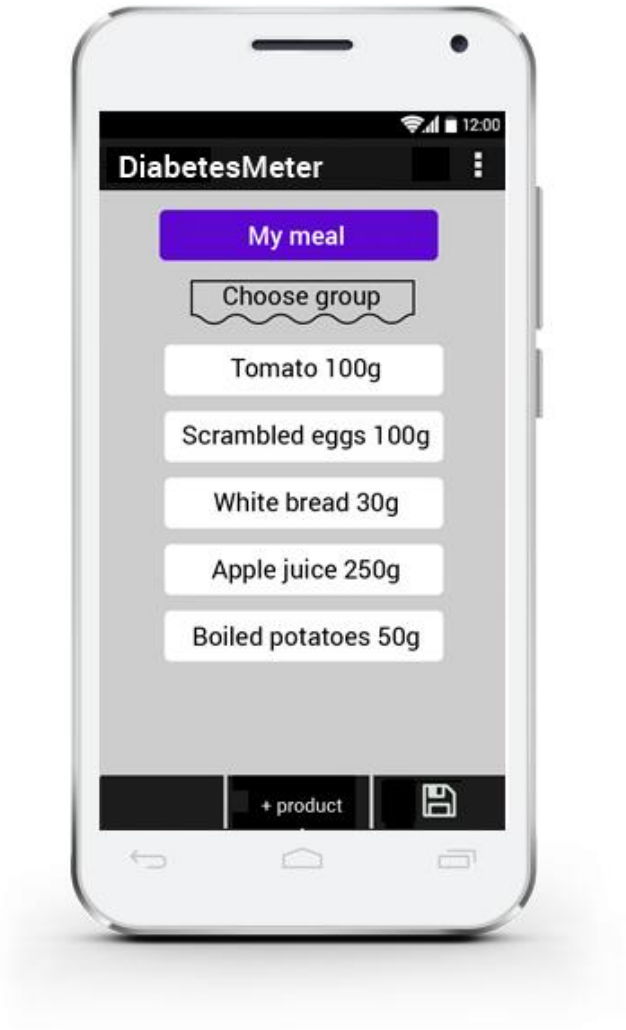
6.1. General outline about setting

After consultation with the attending physician, the user in this modul enters value of insulin sensitivity index, Insulin/CE index that specifies how many units of insulin compensates one carbohydrate exchange, Insulin/PFE index that specifies how many units of insulin compensates one protein-fat exchange as well as basal insulin.

Furthermore, time of meals, infusion set type, new products and meals can be entered. Below, you can find an example screen for entering new product. Select the “Setting” button on the main page, select “Products” and click on the bottom bar of the following screen “+ product”.

6.2. Creating a meal

The user can create a meal that consists of 7 or fewer products. This functionality is highly recommended when you have meals that you eat often, on a regular basis. For this purpose, select the “Setting” button on the main page, select “Meals” and click on the bottom bar “+ meal”. Below, you can find a screen for defining a meal.



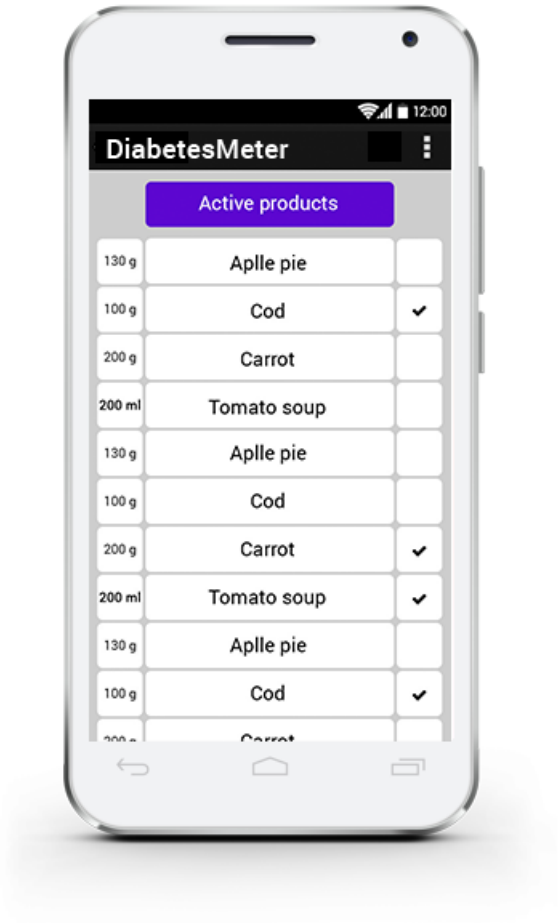
After taping the name of the meal, attribute it to a proper group using “Choose group” button and define its ingredients using “+ product” option.

6.3. Product selection

Some products may be unavailable, some you do not like or are not recommended by your doctor. In such cases, it is advisable to use the “Products Selection” functionality that makes it possible to define products that are to be seen in the application and the ones that should be avoided. This activity will facilitate future making use of the application.

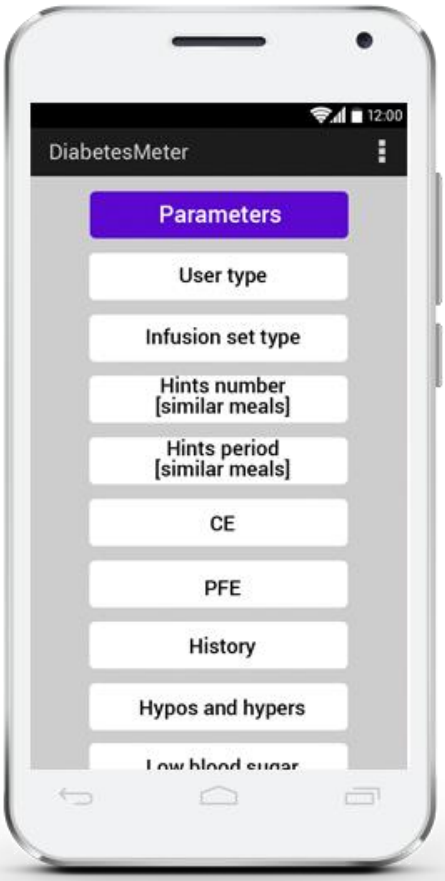
On the main page, select the “Setting” button and next “Database”, followed by “Product Selection”.

A new screen occurs where the user determines, by clicking on the tiles on the right, whether a given product should be seen in the application or not. If the hook is visible, the product is in the active list and appears on other screens of the application.



There are 250 basic products available in the application. It is also possible to enter additional products manually (see item 6.1) or after installing the “DietMeter” application. To this end, you shall select on the main page the “Settings” button, next “Database”, and then “Take additional products after installing DietMeter”.

6.4. Parameters



The setting module allows to specify user type. On the main page select the “Setting” button, next ”Parameters ” and ”User type”.

Functionality for a given user type:

User with insulin pump	**User who takes fast acting insulin analog** (as a rule injection before every meal)	**User who takes fast acting insulin, insulin mixes** (There are meals that do not need insulin injection)
↓	↓	↓
CE and PFE calculator, historical entries, hints regarding insulin dose, reports (for example Basal Insulin Report), reminders regarding infusion set replacement	CE and PFE calculator, historical entries, hints regarding insulin dose, reports, reminders regarding insulin injection	CE and PFE calculator, historical entries, reports, reminders regarding insulin injection

We can use “PFE” button to choose method of protein fat exchange calculation. In "PFE" mode all the products are included. In "PFE50" mode only products with more than 50% of energy acquired from protein and fat (for example cured meat, meat, oils, fishes and dairy products) are taken into consideration (fruits and bread are skipped). The "PFE50" mode is default. The user can also decide whether carbohydrate exchanges or carbohydrates in grams should be presented. The methods should be consulted with a physician.

Using “Parameters” button user can also specify infusion set type, hints number, hypo&hyper analysis period, low blood sugar (hypoglycaemia) and high blood sugar (hyperglycaemia).